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**1 Linear-time suffix parsing for deterministic languages**

Mark-Jan Nederhof, Eberhard Bertsch

May 1996 **Journal of the ACM (JACM)**, Volume 43 Issue 3Full text available: pdf(2.53 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We present a linear-time algorithm to decide for any fixed deterministic context-free language L and input string w whether w is a suffix of some string in L. In contrast to a previously published technique, the decision procedure may be extended to produce syntactic structures (parses) without an increase in time complexity. We also show how this algorithm may be applied to process incorrect input in linear time.

**2 An Observation on Relative Parsing Time**

Eberhard Bertsch

October 1975 **Journal of the ACM (JACM)**, Volume 22 Issue 4Full text available: pdf(326.56 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**3 On failure of the pruning technique in "Error repair in shift-reduce parsers"**

Eberhard Bertsch, Mark-Jan Nederhof

January 1999 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 21 Issue 1Full text available: pdf(171.15 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

A previous article presented a technique to compute the least-cost error repair by incrementally generating configurations that result from inserting and deleting tokens a syntactically incorrect input. An additional mechanism to improve the run-time efficiency of this algorithm by pruning some of the configurations was discussed as well. In this communication we show that the pruning mechanism may lead to suboptimal repairs or may block all repairs. Certain grammatical er ...

Keywords: error repair**4 The storage requirement in precedence parsing**

Eberhard Bertsch

March 1977 **Communications of the ACM**, Volume 20 Issue 3

Full text available: pdf(249.11 KB) Additional Information: [full citation](#), [references](#)

Keywords: precedence parsing, storage requirement, value table

5 The influence of productions on derivations and parsing (Extended Abstract)

Benton L. Leong, Detlef Wotschke

January 1976 **Proceedings of the 3rd ACM SIGACT-SIGPLAN symposium on Principles on programming languages**

Full text available: pdf(599.10 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The concept of grammar forms [4,5] provides evidence that there seems to be no way to base the definitions of many grammar types used in parsing and compiling solely on the concept of productions. Strict interpretations, as introduced in [3,5], of unambiguous or LR (k) grammar forms generate unambiguous or LR(k) languages, respectively. This is not true in the LL(k) case. It is decidable whether a strict interpretation of an unambiguous grammar form is unambiguous. For ...

6 Parser speedup by experimental transformation of grammars(abstract and references only)

E. Bertsch

April 1999 **Proceedings of the 19th annual conference on Computer Science**

Full text available: pdf(90.99 KB) Additional Information: [full citation](#), [references](#)

7 Practical performance/power alternatives within an existing CMOS technology generation

Kerry Bernstein, John E. Bertsch, William F. Clark, John J. Ellis-Monaghan, Larry G. Heller, Edward J. Nowak

August 1996 **Proceedings of the 1996 international symposium on Low power electronics and design**

Full text available: pdf(69.16 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

8 A parallel topological feature map in APL

J. Frey, D. Scheppelmann, G.-P. Glombitzka, H. Meinzer

September 1993 **ACM SIGAPL APL Quote Quad , Proceedings of the international conference on APL**, Volume 24 Issue 1

Full text available: pdf(467.63 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

One can distinguish two different approaches of neural networks the supervised networks and the self organizing or unsupervised neural networks. The first type of neural nets is supplied with an ideal result regarding the input. During the learning procedure, the neural net adjusts weighting factors of the links between neurons so that the input feature vectors map to the ideal output. Those nets are used for example in robotics, where the ideal result is well known: it is the position the robot ...

9 Error repair with validation in LR-based parsing

Ik-Soon Kim, Kwang-Moo Choe

July 2001 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 23 Issue 4

Full text available: Additional Information:

 pdf(282.80 KB)[full citation, abstract, references, index terms](#)

When the compiler encounters an error symbol in an erroneous input, the local error-repair method repairs the input by either inserting a repair string before the error symbol or deleting the error symbol. Although the extended FMQ of Fischer et al. and the method of McKenzie et al. report the improved quality of diagnostic messages, they suffer from redundant parse stack configurations. This article proposes an efficient LR error-recovery method, with validation-removing repairs that give the sa ...

Keywords: Complexity, LR, error recovery, least cost

10 The intersection of finite state automata and definite clause grammars 

Gertjan van Noord

June 1995 **Proceedings of the 33rd conference on Association for Computational Linguistics**

Full text available:  pdf(534.47 KB) 

Additional Information: [full citation, abstract, references, citings](#)

Bernard Lang defines parsing as the calculation of the intersection of a FSA (the input) and a CFG. Viewing the input for parsing as a FSA rather than as a string combines well with some approaches in speech understanding systems, in which parsing takes a word lattice as input (rather than a word string). Furthermore, certain techniques for robust parsing can be modelled as finite state transducers. In this paper we investigate how we can generalize this approach for unification grammars. In part ...

11 The "HyTime": hypermedia/time-based document structuring language 

Steven R. Newcomb, Neill A. Kipp, Victoria T. Newcomb

November 1991 **Communications of the ACM**, Volume 34 Issue 11

Full text available:  pdf(12.96 MB) Additional Information: [full citation, references, citings, index terms](#)

12 Dichotomization, reachability, and the forbidden subgraph problem(Extended Abstract) 

H. B. Hunt, T. G. Szymanski

May 1976 **Proceedings of the eighth annual ACM symposium on Theory of computing**

Full text available:  pdf(778.59 KB) Additional Information: [full citation, abstract, references, citings, index terms](#)

We present several techniques for proving lower bounds that can be applied to problems about grammars, formal languages, program schemes, simple programming languages, and automata. These techniques include dichotomization, extensions of dichotomization to certain classes of relational problems, recursive analogues of the Post Correspondence Problem, and the reachability problem. These techniques provide many new lower bounds and provide a unified framework for viewing much of the work on t ...

13 Asynchronous design/evaluation methods for hypertext technology development 

G. Perlman

November 1989 **Proceedings of the second annual ACM conference on Hypertext**

Full text available:  pdf(1.98 MB) Additional Information: [full citation, abstract, references, citings, index terms](#)

A process model used in the design and evaluation of hypertext systems is discussed. The model includes asynchronous processes of task analysis, document analysis, literature survey and systems evaluation, interpretation of data, designing and building systems, and collecting data. For each process, experiences with NaviText™ SAM, a hypertext interface to a reference source, are discussed. A variety of new methods for evaluation of experimental

systems are presented along with several ...

14 Journal Backlog Report

Mark A. Weiss

July 1996 **ACM SIGACT News**, Volume 27 Issue 2

Full text available:  pdf(468.51 KB)

Additional Information: [full citation](#)



15 Exchange of patient records-prototype implementation of a security attributes service in X.500

Marjan Jurečič, Herbert Bunz

November 1994 **Proceedings of the 2nd ACM Conference on Computer and communications security**

Full text available:  pdf(884.04 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In Europe, the use of computers in health care industry has increased rapidly in recent years. This increase, however, has been accomplished with research efforts in the area of privacy and confidentiality of personal data. In the German legislation, protection of personal data is guaranteed by the constitution, granting a general right to privacy. This constitutional right has been amended by the German Central Court (Bundesverfassungsgericht). It says that each individual has the right to ...

16 Book reviews: Review of "Extended finite state models of language" by András Kornai.

Cambridge University Press 1999.

Ed Kaiser

June 2000 **Computational Linguistics**, Volume 26 Issue 2

Full text available:  pdf(287.47 KB)

Additional Information: [full citation](#), [references](#)

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17 Book reviews: Review of "Computational linguistics: an international handbook on computer oriented language research and applications/Computerlinguistik: ein internationales handbuch zur computergestützten Sprachforschung und ihrer anwendungen" by Istvan S. Bátori, Winfried Lenders, and Wolfgang Putschke. Walter de Gruyter 1989.

Graeme Hirst

June 1990 **Computational Linguistics**, Volume 16 Issue 2

Full text available:  pdf(380.46 KB)

Additional Information: [full citation](#)

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18 A comparison of next-fit, first-fit, and best-fit

Carter Bays

March 1977 **Communications of the ACM**, Volume 20 Issue 3

Full text available:  pdf(148.39 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

"Next-fit" allocation differs from first-fit in that a first-fit allocator commences its search for free space at a fixed end of memory, whereas a next-fit allocator commences its search wherever it previously stopped searching. This strategy is called "modified first-fit" by Shore [2] and is significantly faster than the first-fit allocator. To evaluate the relative efficiency of



next-fit (as well as to confirm Shore's results) a simulation was written in Basic Plus ...

Keywords: best-fit, first-fit, memory allocation, next-fit

19 Music and computer composition

James Anderson Moorer

February 1972 **Communications of the ACM**, Volume 15 Issue 2

Full text available:  pdf(1.03 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

The problem discussed is that of simulating human composition of Western popular music by computer and some relevant theories of music and harmony are given. Problems with this kind of program and several schemes that are known not to work are discussed. Several previous computer compositions are discussed, including the ILLIAC Suite. A program to generate short melody fragments was written to simulate some of the aspects of human composition. Five samples of its output are prese ...

Keywords: artificial intelligence, computer composition, computer music, heuristic programming, models of cognitive processes, music theory

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